

WHAT IS CLAIMED IS:

1           1. A network service entity for a base station system,  
2 comprising:

3                 at least one point-to-point functional unit;  
4                 a signalling functional unit; and  
5                 a message distributor unit, said message distributor unit  
6 coupled to said at least one point-to-point functional unit,  
7 said signalling function unit, and a connection interface, said  
8 message distributor unit operable to distribute packet  
9 information to or from said connection interface.

10           2. The network service entity of Claim 1, further  
11 comprising:

12                 a point-to-multipoint functional entity coupled to said  
13 message distributor unit.

14           3. The network service entity of Claim 1, wherein the  
15 base station system comprises an IP-based base station system.

1           4. The network service entity of Claim 1, wherein said  
2       signalling functional unit comprises a BVC signalling functional  
3       unit.

4           5. The network service entity of Claim 1, wherein said  
5       network service entity comprises a PCU.

6           6. The network service entity of Claim 1, wherein said  
7       packet information comprises GPRS data.

8           7. The network service entity of Claim 1, wherein said  
9       packet information comprises EDGE GPRS data.

10          8. The network service entity of Claim 1, wherein said  
11       connection interface comprises a Gb interface.

1           9. The network service entity of Claim 1, wherein said  
2       at least one point-to-point functional unit includes an RLC/MAC  
3       control unit.

4           10. The network service entity of Claim 1, wherein said  
5       at least one point-to-point functional unit is coupled to a  
6       radio air interface.

7           11. The network service entity of Claim 1, wherein said  
8       message distributor unit is operable to route BVCI-based BSSGP  
9       packets.

10          12. The network service entity of claim 1, wherein said  
11       message distributor unit is operable to build a BVCI-to-IP  
12       address/port relationship table using a plug 'n play  
13       application.

1           13. A base station system, comprising:

2           a radio base station, said radio base station including at  
3           least one of a point-to-point functional unit, a point-to-point  
4           termination functional unit, a channel control unit, and a pager  
5           agent unit;

6           a radio network server coupled to said radio base station,  
7           said radio network server including at least one of a BVC  
8           management functional unit, a signalling termination unit, and  
9           a pager unit; and

10          a gateway coupled to said radio base station and said radio  
11          network server, said gateway including at least one of a message  
12          distributor unit coupled to a connection interface and operable  
13          to distribute packet information, and a network service  
14          management functional unit.

15          14. The base station system of Claim 13, further  
16          comprising:

1           a point-to-multipoint functional unit coupled to said  
2        message distributor unit, said radio base station, and said  
3        radio network server.

4           15. The base station system of Claim 13, wherein said  
5        signalling termination functional unit comprises a BSSGP  
6        signalling termination functional unit.

7           16. The base station system of Claim 13, wherein said  
8        packet information comprises GPRS data.

9           17. The base station system of Claim 13, wherein said  
10      packet information comprises EDGE data.

11          18. The base station system of Claim 13, wherein said  
12      connection interface comprises a Gb interface.

1           19. The base station system of Claim 13, wherein said  
2 point-to-point functional unit includes an RLC/MAC control unit.

3           20. The base station system of Claim 13, wherein said  
4 point-to-point functional unit is coupled to a radio air  
5 interface by said channel control unit.

6           21. The base station system of Claim 13, wherein said  
7 message distributor unit is operable to route BVCI-based BSSGP  
8 packets.

9           22. The base station system of Claim 13, wherein said  
10 radio base station and said radio network server are coupled via  
11 a G21 signalling protocol.

12          23. The base station system of Claim 13, wherein said  
13 gateway and said radio network server are coupled via a GateWay-  
14 Radio Network Server signalling protocol.

1           24. A mobile communication system, comprising:  
2                 at least one radio base station, said at least one radio  
3                 base station including at least one of a point-to-point  
4                 functional unit, a point-to-point termination functional unit,  
5                 a channel control unit, and a pager agent unit;  
6                 at least one radio network server coupled to said at least  
7                 one radio base station, said at least one radio network server  
8                 including at least one of a BVC management functional unit, a  
9                 signalling termination unit, a network service management unit,  
10                 and a pager unit; and  
11                 a serving GPRS support node coupled to said at least one  
12                 radio base station and said at least one radio network server,  
13                 said serving GPRS support node including at least a message  
14                 distributor unit coupled to a connection interface and operable  
15                 to distribute packet information.

16           25. The mobile communication system of Claim 24, further  
17                 comprising:

1           a point-to-multipoint functional unit associated with said  
2       at least one radio network server.

3           26. The mobile communication system of Claim 24, further  
4       comprising:

5           a point-to-multipoint functional unit coupled to said  
6       message distributor unit, said at least one radio base station,  
7       and said at least one radio network server.

8           27. The mobile communication system of Claim 24, wherein  
9       said signalling termination unit comprises a BSSGP signalling  
10      termination unit.

11          28. The mobile communication system of Claim 24, wherein  
12      said packet information comprises GPRS data.

13          29. The mobile communication system of Claim 24, wherein  
14      said packet information comprises EDGE GPRS data.

1           30. The mobile communication system of Claim 24, wherein  
2        said connection interface comprises a Gb interface.

3           31. The mobile communication system of Claim 24, wherein  
4        said connection interface comprises a Gb over IP interface.

5           32. The mobile communication system of Claim 24, wherein  
6        said point-to-point functional unit includes an RLC/MAC control  
7        unit.

8           33. The mobile communication system of Claim 24, wherein  
9        said point-to-point functional unit is coupled to a radio air  
10      interface by said channel control unit.

11          34. The mobile communication system of Claim 24, wherein  
12        said at least a message distributor unit is operable to route  
13      BVCI-based BSSGP packets.

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1       35. The mobile communication system of Claim 24, wherein  
2       said at least one radio base station and said at least one radio  
3       network server are coupled via a G21 signalling protocol.

1           36. A radio base station for a base station system,  
2 comprising:  
3            a point-to-point functional unit;  
4            a point-to-point termination functional unit coupled to  
5        said point-to-point functional unit;  
6            a channel control unit coupled to a radio air interface;  
7        and  
8            a pager agent unit coupled to said channel control unit and  
9        said point-to-point functional unit.

10          37. A radio network server for a base station system,  
11 comprising:  
12            a management functional unit;  
13            a signalling termination functional unit coupled to said  
14        management functional unit; and  
15            a pager unit coupled to said signalling termination  
16        functional unit.

1       38. The radio network server of Claim 37, wherein said  
2 management functional unit comprises a BVC management functional  
3 unit.

4       39. The radio network server of Claim 37, wherein said  
5 signalling termination functional unit comprises a BSSGP  
6 signalling termination functional unit.

7       40. A gateway for a base station system, comprising:  
8            a message distributor unit coupled to a connection  
9            interface and a point-to-multipoint functional unit, said  
10          message distributor unit operable to distribute packet  
11          information to a plurality of network units; and  
12            a network service management functional unit.

1           41. A method for controlling network service functions in  
2        a base station system, comprising the steps of:  
3           controlling a connection for conveying data between at  
4        least two endpoints in said base station system;  
5           controlling a connection for conveying said data between at  
6        least a third endpoint and said at least two endpoints in said  
7        base station system;  
8           controlling at least one connection for conveying  
9        signalling information in said base station system; and  
10          distributing said data to or from a connection interface.

11          42. The method of Claim 41, wherein the base station  
12        system comprises an IP-based base station system.

13          43. The method of Claim 41, wherein said signalling  
14        information comprises BVC signalling information.

1           44. The method of Claim 41, wherein said network service  
2       functions reside in a PCU.

3           45. The method of Claim 41, wherein said data comprises  
4       GPRS packet data.

5           46. The method of Claim 41, wherein said data comprises  
6       EDGE GPRS data.

7           47. The method of Claim 41, wherein said connection  
8       interface comprises a Gb interface.

9           48. The method of Claim 41, wherein the step of  
10      distributing said data to or from a connection interface  
11      comprises routing BVCI-based BSSGP packets to or from a Gb  
12      interface.